

**APPENDIX A.**  
**JOB SAFETY ANALYSIS FORMS**

<b>JSA NUMBER:</b> Yerington – 04 <b>NEW X</b> <b>REVISION</b>	<b>DATE:</b> 01/14/03	<b>Company Performing the Job:</b> Brown and Caldwell	<b>SUPERVISOR:</b> Charles Zimmerman  <b>SAFETY OFFICER:</b> Brian Bass
<b>JOB TITLE OR TASK:</b>  Surface Investigation for Process Areas closure.	<b>TITLE OF PERSON(S) WHO PERFORMS JOB:</b> Site Managers: Brian Bass, Nathan Robison, Chad Leonard Operations Technician:		<b>ANALYSIS BY:</b> Brian Bass  <b>REVIEWED BY:</b>  <b>APPROVED BY:</b>
<b>RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE) AND/OR PERTINENT JOB SAFETY FORMS:</b> Hard hat, safety goggles or glasses, steel-toed boots. As appropriate: rubber gloves, face shield, rubber boots or hip waders, half-mask respirator.			
<b>SEQUENCE OF BASIC JOB STEPS</b>	<b>POTENTIAL HAZARDS</b>	<b>PREVENTIVE OR CORRECTIVE ACTION</b>	
1. Pre-Construction Safety Meeting.		1. All employees assigned to this task will attend a pre-construction safety meeting, which will include the pertinent JSAs, Standard Operating Procedures, types of potential hazards, and actual hazards present and controls for those hazards.	
2. Sample location setup - Backhoe	1. Drilling or digging into underground utilities 2. Striking overhead lines or objects with drill mast or backhoe boom.	1. Identify underground utilities whenever possible. 2. Identify all overhead objects and lines prior to setup.	
3. Soil sampling: Backhoe excavation	1. Injury to hearing from noise. 2. Inhalation hazards from dust from drilling or excavation activities. 3. Physical injury from moving parts of machinery. 4. Physical hazards to personnel on the ground in the vicinity of the heavy machinery. 5. Hazard from being in or near excavation.	1. Wear ear plugs to abate noise when noise level is loud enough so that a conversation at normal distance can not be conducted. 2. Wear a respirator with appropriate cartridge when dust is present. 3. Wear a hard hat and stay away from backhoe or excavator when the machinery is in operation. 4. Persons that must be in the proximity of moving machinery should always wear a hard hat, and stay in constant eye-contact and hand communication with the operator. 5. Stay away from open excavations, especially within eight feet of excavation boundary, to avoid being a victim to cave-ins.	
4. Prepare sample bottles and dress in appropriate PPE.	1. Burn or corrosion from acid spillage, if sample bottles require acid or already have acid already in them.	1. Wear rubber or latex gloves to prevent contact with hands and arms. 2. Wear safety glasses or goggles to prevent eye contact from splashes or spills.	
5. Collection of soil sample by hand and decontamination of equipment.	1. Skin irritation from dermal or eye contact. 2. Slipping or falling on concrete structures- sharp rock and protruding objects. 3. ENCOUNTERING CONTAINERS WITH SEALED AND UNLABELED CONTENTS ---UNKNOWN !!!! POTENTIAL FOR EXPLOSION OR INHALATION OF POISONOUS VAPOR OR DUST.	1. Wear rubber or latex gloves to prevent contact with hands and arms. 2. Wear safety glasses or goggles to prevent eye contact from dust. 3. Wear boots with treaded soles to reduce potential for slipping.	

SEQUENCE OF BASIC JOB STEPS	POTENTIAL HAZARDS	PREVENTIVE OR CORRECTIVE ACTION
6. All Activities	<ol style="list-style-type: none"> <li>1. Back injuries during manual handling of materials due to improper load weight and position, repetition, or improper bending of knees.</li> <li>2. Hand injuries during manual handling of materials due to lack of or improper gloves, sharp edges, slippery surfaces, pinch points, or incompatible substances.</li> <li>3. Foot injuries during manual handling of materials due to falling objects, pinch points, or spills.</li> <li>4. Slips, trips, and falls due to lack of visibility (e.g., insufficient light), poor housekeeping, improper routes, faulty equipment, or slippery surfaces.</li> </ol>	<ol style="list-style-type: none"> <li>1. Workers should inspect materials for slivers, jagged or sharp edges, and rough or slippery surfaces.</li> <li>2. Workers should wipe off greasy, wet, slippery, or dirty objects before attempting to handle them.</li> <li>3. In most cases, gloves or other protection should be used to prevent hand injuries. Check the compatibility of glove material with substances being handled. Keep hands away from mechanical pinch points (e.g., rollers, moving parts).</li> <li>4. Steel-toed boots should be used for protection of the feet when not in the water.</li> <li>5. Routes should be surveyed for obstacles prior to moving materials from one location to another.</li> <li>6. All three main factors in manual lifting (load location, task repetition, and load weight) must be considered when evaluating what is safe or unsafe to lift.</li> <li>7. All manual handling of heavy or bulky objects should be carefully planned to avoid injuries and damage to equipment.</li> <li>8. Provide proper lighting for work area, keep floors and ground surface free of debris, plan routes ahead of time, dispose of faulty equipment (ladders, safety equipment), and avoid or mitigate slippery floor surfaces.</li> </ol>
4. All Activities	<ol style="list-style-type: none"> <li>1. Heat exhaustion or stroke due to high ambient temperature, improper clothing, lack of ventilation, lack of water, or lack of shade.</li> </ol>	<ol style="list-style-type: none"> <li>1. Avoid strenuous work in ambient temperatures over 80 degrees F.</li> <li>2. Wear light-colored clothing, shaded sunglasses, and hat that provides shade and adequate air movement.</li> <li>3. Find cool, shady area for breaks or respite from heat.</li> <li>4. If worker feels dizzy, has a headache, has cool, moist, or pale skin or is weak, immediately move to a cooler environment, loosen tight clothing, provide air circulation to area, and provide small amounts of cool water to drink.</li> <li>5. If worker has a change in level of consciousness, high body temperature, red, hot skin, rapid or weak pulse, or rapid or shallow breathing, call the emergency phone number and give care in accordance with #4 above.</li> </ol>

SEQUENCE OF BASIC JOB STEPS	POTENTIAL HAZARDS	PREVENTIVE OR CORRECTIVE ACTION
5. All Activities	1. Hypothermia or frostbite due to low ambient temperature, improper clothing, damp or wet clothing, or lack of source for heat.	1. Avoid working in extreme cold. 2. Wear warm, layered clothing with adequate protection for hands and feet. 3. Find warm area out of the wind for breaks or respite from cold. 4. If worker experiences shivering, irregular pulse, numbness, glassy stare, impaired judgement, loss of muscle control with no shivering, or loss of consciousness, gently move worker to warm place, check vital signs, remove any wet clothing, cover with blankets and warm slowly. 5. If worker experiences loss of feeling or sensation in extremities, discolored or waxy skin, blisters or blue skin, remove wet clothing and jewelry, soak frostbitten area in warm water, cover with dry, sterile dressing (do not rub anything on the area), check vital signs.
6. Unsafe conditions.	1. All potential hazards including but not limited to classified hazardous locations, sudden or unexpected unsafe conditions (fire, chemical release, natural disasters), or confined spaces.	1. Where a situation presents a hazardous condition, the exposed employee will be removed from the hazardous area until all necessary precautions have been taken to eliminate the hazard and ensure their safety.

Personnel Signatures		
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